

Uttarakhand PCS PCS Examination



Syllabus 2016

euttaranchal

Part - I (First Question Paper)

Total Marks : 300

Time : 03 Hours

Unit - I : Language

1. सामान्य हिंदी (General Hindi)

(क) राजभाषा परनियमावली (संकयषपितपरचिय) :- शब्द रचना (उपसर्ग एवं प्रत्यय, संधि एवं समास, वचन एवं लिंग), व्याकरणीय कोटियाँ - संज्ञा, सर्वनाम, क्रिया-वशिषण, अव्यय (परभाषा एवं भेद), वाच्य परिवर्तन (कर्तवाच्य, कर्मवाच्य, भाववाच्य), शब्द वचिक (शब्दभेद - क.तत्सम, तद्भव, देशज, वदिशी, संकर, रूढयोगिक, योगरूढ, पर्यायवाची, समानार्थी, वल्लोम, अनेकार्थी, समूहवाची, समरूप कन्तु भन्निनार्थक, पारभाषिक, शब्दयुग्म, वाक्य या वाक्यांश के लिये एक शब्द, संक्षपिताक्षर), शब्द शुद्धि, वाक्य रचना (रचना के आधार पर वाक्य परिवर्तन (सरल, मशिर एवं संयुक्त), व्याकरण के आधार पर वाक्य परिवर्तन), वरिमचनिह, वाक्यशुद्धि, सलोगनलेखन

(ख) भाषा का मानकीकरण :- वर्तनी का मानकीकरण, व्याकरण का मानकीकरण, लपिका मानकीकरण, उच्चारण का मानकीकरण,

(ग) लोकोक्ति, मुहावरे

(घ) अपठति गद्यांश :- (क) शीर्षकीकरण (ख) भावार्थ (ग) रेखांकित अंशों की व्याख्या

(ज) कार्यालयी पत्रों के प्रारूप : शासकीय पत्र, अर्द्धशासकीय पत्र, अधिसूचना, परपितर, कार्यालयादेश, कार्यालय ज्ञाप, अनुसमारक, वज्जिपति, टपिण्णी, प्रारूपण, संक्षेपण, हिंदी भाषा का कंप्यूटरीकरण शब्द संसाधन, डाटाप्रवर्षिटी, मुद्रण, इन्टरनेट

2. General English

- (1) Comprehension (The passage for Comprehension should test the candidates knowledge of English Language as well as his/her understanding of the organization of the key concepts of the passages. Question should focus both on the idea contained in the passage, and on language component such as vocabulary, phrasal verbs, synonyms & antonyms etc.)
- (2) Translation from Hindi to English / English into Hindi
- (3) Common errors in English

3. Essay Writing (नबिंध लेखन)

खण्ड क (Part I)

1. उत्तराखंड की सामाजिक संरचना, इतिहास संस्कृति एवं कला (Social Structure, History, Culture and Art of Uttarakhand)
2. उत्तराखंड का आर्थिक एवं भौगोलिक परिदृश्य एवं पर्यावरण (Economic & Geographical Scenario and Environment of Uttarakhand)
3. उत्तराखंड का साहित्य (Literature of Uttarakhand)
4. उत्तराखंड में महिला सशक्तिकरण : चुनौतियाँ एवं संभावनाएं (Women Empowerment in Uttarakhand : Challenges & Prospects)

खण्ड ख (Part II)

1. भारतीय अर्थ एवं राज व्यवस्था (Indian Economy and Polity System)
2. विज्ञान एवं तकनीकी (Science & Technology)
3. आपदा एवं जन स्वास्थ्य प्रबंधन (Disaster and Public Health Management)
4. समसामयिक घटनाक्रम (Current Events)
5. विश्व सुरक्षा, मानवाधिकार और भारत (Global Security, Human Rights & India)

Main Examination

Part II

(Second Question Paper : History of India, National Movements, Society & Culture)

Total Marks : 300

Time : 3 Hours

Pre Historic Period :
Race & Culture

Proto Historic Period :
Early Stone Age-Hunters and Gatherers : Mesolithic Period : Food Producers

Copper Age :
Farming Culture, Settlements, Copper Hoards, Ochere, Coloured Pottery, Bronze Age Civilization, Harappan Civilization-Geographical expansion, Town Planning, Construction & Drainage System, Political System, Social, Economic & Religious Life.

Vedic Civilization :
Rigvedic Age-Political, Social, Economic and Religious life, Later Vedic Period - Social, Economic, Religious & Cultural Life, Age of Epic and Dharma shastras, Religious Movements in 6th century B.C : Jainism, Buddhism and other sects.

Maha Janpadas and rise of Magadh Empire :
Persian & Greek Invasion : Persian invasion, Alexander, the great and his legacy.

Mauryan Empire :
Chandragupta Maurya, Bindusar, Ashoka and his Dhamma, Decline of Mauryan Empire, Political, Social, Economic and Culture etc in Mauryan Period.

Post Mauryan Periods :
Political, Social, Economical, Religious and Cultural Life during Kushanas, Pahalavas, Saka, Vakataka and Satavahana Rule.

Gupta Dynasty :
Chandragupta I, Samudragupta, Chandragupta II, Skandagupta, Later Gupta Ruler and Decline of Gupta Dynasty : Political, Social, Economical, Religious and Cultural Life during Gupta Period, Post Gupta Period : Harshvardhan & Times, Pal, Rashtrakut, Pratihara, Cholas, Chalukya, Pallva, Chandel, Paramar, Gaharwad, Chauhan, Post Gupta Period : Political, Social, Economic, Religious and Cultural Life.

Advent of Islam in India, Arab invasion of Sindh, Turk invasion of India, Establishment of Delhi Sultanat :

Advent of Islam in India, Arab invasion of Sindh, Turk invasion of India, Establishment of Delhi Sultanat :

Qutubuddin Aibak, Iltutmish, Razia, Nature of early Turkish Rule, Balban : Theory of Kingship and judicial system.

Khilji Dynasty :

Jalaluddin Khilji, Alauddin Khilji Expansion of Sultanate, Administration, reforms, Military reforms, Economic reforms.

Tughlaq Dynasty :

Ghiyasuddin Tughlaq, Muhamad-bin-Tughlaq, Political & Administrative experiments, Feroz Shah Tughlaq, Mongol invasion and its impact, Disintegration of Delhi Sultanate, First Afghan Empire, Rise of Independent muslims seats in northern India - Sharqis of Jaunpur, Kashmir - Sultan Sikandar and Sultan Zainnul Abidin, States of Malwa, Bengal, Gujarat and other state.

Socio Religious Movements :

Sufism & Bhakti Movements

Southern India :

Sangam Age, Yadavas of Deogiri, Kakatiyas of Warangal, Hoysals of Dwarsamudra and Pandyas of Madurai, Chola Dynasty, Political, Social, Economic and Cultural life. Vijyanagar and Bahmani Empire - Political, Social, Economic and Religious and Cultural life of Delhi Sultanate.

Establishment of Mughal Empire :

Babar, Humayun, Shershah Suri, Akbar, Jahangir, Shahjahan, Aurangzeb, Later Mughals and Fall of Mughal Empires, Bahadur Shah Zafar, Mughal Administration, Rise of Peshwas, Bundelas, Sikhs, Jat & Satnamis.

Advent and Expansion of European Power in India :

Portuguese, Dutch, French & British, Anglo-French rivalry and Carnatic War.

Colonization :

East India Company and Bengal, Nawab Sirajuddaula, Battle of Plassey, Mir Jafar, Mir Quasim, Battle of Buxar, Dual Govt in Bengal, Second Governorship of Lord Clive.

Society and Economy during 18th century :

Expansion & Consolidation of British power in India-Warren Hastings, Lord Cornwallis, Lord Wellesley, Lord Hastings, Lord William Bentinck, Lord Ellenborough and annexation of Sindh, Lord Auckland and First Afgan War.

Indian State and the British :

Mysore, Punjab, Avadh, Hyderabad & Maratha : Lord Dalhousie.

Structure of Govt. and Economic policies of British Empire in India (1757-1857) :

Administrative Organization, Social & Cultural Policies.

Socio-Religious reform Movement in the 19th century :

Brahmo Samaj, Arya Samaj, Theosophical Society etc.

Opposition to British Rule :

Tribal & Non-military revolts, popular movements and military revolts between 1757 & 1856 - causes, nature, expansion, consequences and failure, Administrative changes after 1858, Economic impact of British Rule, Impact of Industrialization on Indian economy.

Indian National Movements :

Growth of Indian Nationalism : Rise of nationalism in India, Predecessors of Indian National Congress, Indian National Congress Origin, Moderates and Extremists in the congress, Partitions of Bengal, Swadeshi Movement, Establishment of Muslim League, Surat Session and first split in Congress, Morley-Minto reforms.

First World war and National Movements :

Home rule movement Lucknow Pact (1916), Champaran, Kheda Satyagrah (1917), Gandhian Era : National Movement (1919-1927), Montague Chelmsford Reforms (1919), Rowlatt Act (1919), Jallian-walabaagh Massacre, Khilafat and Non-Cooperation movements (1919-1922), Chaura-Chauri Episod (1922), Swaraj Party and Simon Commission (1927). Revolutionary movements in India and Abroad.

National Movements (1927-1947) :

Boycott of Simon Commission, Nehru Report, Lahore Session of Congress (1929), Press & National Movements, Poorna Swaraj, Civil Disobedience Movement, First Round Table Conference, Gandhi-Irwin Pact, Second Round Table Conference, Second Phase of civil disobedience Movements, Communal Award, Third Round Table Conference, Poona Pact, B.R. Ambedkar and Dalit Reform movements.

Nationalist Politics (1935-39) :

Government of India Act 1935, Congress Ministries, Growth of Socialist, Communist, Capitalist Ideas, their forms & effects on the society, Peasant and workers movements. Congress and world affairs, Resignation of Congress ministries, Subhash Chandra Bosh and (Azad Hind Fauj - INA), Growth of Communalism and Demand for Pakistan.

National Movements during Second World War :

August Resolution, Individual civil dis-obedience Movements, Cripps Mission, Quit India Movement, C.R Das formula, Gandhi-Jinnha Talk, Bhoola Bhai Desai - Liyaquat Ali Pact, Wavell Plan & Simla Conference, Provincial and General Election, Cabinet Mission Plan, Indian National Army, Direct Action Day, Interim Government, Mountbatten Plan, Indian Independence Act 1947, Communal Riots and Partition of India.

India after Independence :

Constituent Assembly and drafting of Indian Constitution. Five year plan, Nationalisation of Bank, Abolition of Privy Purses, J.P (Jai Prakash Movements), Emergency, Era of Coalition Government, Internal Insurgency.

Foreign Policy :

Panchsheel, War between Indo-China and Indo-Pak, Non-Aligned movement, South Asian Association for regional Cooperation (SAARC).

History and Culture of Uttarakhand :

Prehistoric Period, Proto-historic Period, Ancient Tribes of Uttarakhand, Kunindas and Yaudheyas, Katyuri Dynasty, Parmar Dynasty in Garhwal Rule, Administration, Society, Economy, Gorkha invasion and rule in Uttarakhand, Religion & Culture in Uttarakhand.

British Rule in Uttarakhand :

Administrative System, Social Reforms, Economy, Education & Health, Growth of Vernacular Press in Uttarakhand, Tehri-Estate Rule, Administration, Society, Economy, Religion and Culture, Uttarakhand and National Movements, Prominent Freedom Fighters of Uttarakhand, Independence and merger of the state of Tehri.

Popular Movements of Uttarakhand :

Coolie-Begar Movements, unrest against Tehri state, Dola-Palki movement, Chipko movement, Anti-liquor movement, Saints and Social Reformers of Uttarakhand, Movement of Separate State of Uttarakhand : Its immediate and far reaching consequences, religious place and temples of Uttarakhand, important archeological sites of Uttarakhand, Uttarakhand's major social, cultural and religious, fairs, festivals and tours, Sites of cultural Significance, Major songs and dances of Uttarakhand, musical instruments, painting, costumes and food habits, dialects, Prominent, Folk singers and theatre artists of Uttarakhand, Crafts, industry & trade of Uttarakhand, Growth of Education in Uttarakhand.

Part III

(Third Question Paper : Indian Polity, Social Justice and International Relation)

Total Marks : 200

Time : 3 Hours

Constitutional Framework of Indian Policy

Constitutional Development in India, Framing of Indian Constitution, Preamble and its Significance, Salient Features of Indian Constitution, Fundamental Rights and Duties, Directive Principles of State policies, Federal Structure Union-State Relation, Parliamentary system in India, Constitutional Bodies - Election commission of India, Finance commission, Comptroller and Auditor general of India, Union-State public service commission and other appointment power of responsibilities, Judiciary : Composition, role, judicial review and judicial activism, Constitutional amendment methods and important constitutional amendments.

Indian Polity

Union Executive, State Executive, Union Parliament & state legislatures, Electro system in India, Salient Features of Representation of People Act, Political Parties & Pressure Groups, Role of Regional Political Parties, Public Accountability, Parliamentary Executive & Judicial, Citizens and Administration : Citizens Grievance Redressal Institution and Mechanism, Central Vigilance Commissions, and Lok pal and Lok ayuktas. Print and Electronic Media - Its impact on policy making, Shaping of public opinion and in educating the people and Press Council of India.

Administrative system in India

Evolution and growth of Administrative in India, Union Government : Cabinet Secretariat, Central Secretariat, PMO etc., Demand for creation of new states, State government : State Secretariat, Chief Secretary, Departments of Directorates, Boards, Corporations and Commissions. Administration of Union Territories and other specified states and areas in India. Civil Service in India : Types, Characteristic, Role and performance. District Administration, Administrative Adjudication : Various type of Administrative Tribunals in India. Lok Adalats and legal awareness Campaign. Administrative reforms in India including various important commissions and committees

Panchayati Raj

Development Administration : Institution; Policy Initiatives, Strategies, Problem and Challenges. Local Governance : 73rd and 74th constitutional amendments. Type of Urban local bodies and Panchayati raj institution in India. Sources of finance in Urban Local Bodies and panchayati raj institution. State finance commission and state selection commission. Decentralized Planning.

Public management in India

Regulatory Governance. Law and rule related administration, citizen centric governance, E-Governance, Right to service, Right to information, Samadhan Yojna, Budgetary reforms, Consumer Protection, Integrity in administration including measures and mechanism for prevention of corruptions and Malpractices in India.

Human Resources and Community Development :-

Employment and Development

Human resource management and human resource development and its indicators in India. Nature, types and problems of Unemployment in India. Employment, Schemes and Programmes both of Union Government and Uttarakhand Govt. Rural development and community development programmes : role of related institution and organization including all centrally and State sponsored schemes.

Education

Role of education especially in Human Resources Development and social changes. Education system in India : Problems and Issues (Including Universalization and Vocationalization). Education for Girls, other socially and economically and other disadvantage sections of people and minorities, etc. Right to education, Sarva Shiksha Abhiyan, Rashtriya Madhyamik Shiksha Abhiyan in Uttarakhand. Status of higher, technical and vocational education in Uttarakhand. Role of various institutions (Central, State and other organization) in promotion of education.

Health

Health as a component of Human resource development, Health care system in India & Uttarakhand, Health Indicators, World Health Organization - Objective, Structure, Function and its programmes, Public private partnership in Health care system, National rural health mission and other related schemes, Health & Nutrition, Food security act.

Social Welfare and Social Legislation

Social Legislation as an element of change, Social legislation and schemes (Central & State) for vulnerable section of society, Protection of civil rights act 1955, Schedule caste & schedule tribes (Prevention & atrocities) Act 1989, Protection of Women from domestic violence Act 2005, Social legislation for the protection & welfare of children, women & minorities etc, Sexual violence against women & children : Preventive & measures, welfare of disabled, aged and other : Enactments, Policies, Institutions & Schemes.

International Relations

Principles and basis Indian Foreign Policies, India and her neighbours, Globalization and its impact on developing countries.

International & Regional Organisations

United nation & it's specialized agencies, Regional organisations - SAARC, ASEAN, EU, NAM, OPEC, Commonwealth of Nation etc, India's cultural diplomacy and Indian Diaspora.

Uttarakhand State : Political, Social and Administrative Context

Historical, Political & Social background of Uttarakhand, Political & Administrative culture in the state, Political System : Party politics, Coalition politics, Role & function of regional politics, parties & pressure group, Administrative System : Structure of the state Government : Ministries & Departments, Administrative agencies and districts and sub districts level Administration, State civil services, State public services commission, Lok Ayukta & state vigilance agencies, Panchayati raj & urban administration in Uttarakhand, Social welfare schemes of Uttarakhand.

Current Events

Current events of state level, National & International importance.

For latest updates on Govt Jobs in Uttarakhand, Exam Preparation Guide and more...

Part IV

(Fourth Question Paper : India & World Geography)

Total Marks : 200,

Time : 3 Hours

World Geography

Definitions and major concepts of Geography, Solar system, spherical coordinates & projections, Time, Earth rotation & revolution, Lunar eclipse, Solar eclipse, Iso-thermic lines etc.

Lithosphere : Origin of Continents & Oceans - Continental Drift theory, Convection Current theory & Plate Tectonic theory, Types of Mountains, Plateaus, Plains, Lake & Rocks, Drainage Pattern, Agents of Denudation - River, wind, Glaciers, etc.

Atmosphere : Composition and structure, Insolation, Heat-budget, Humidity and precipitation, Pressure and wind belts,

Hydrosphere : Oceans - Bottom relief, currents, tides, temperature & Salinity, Hydrological cycle.

Geographical Phenomena

Earthquakes, Tsunami, Volcanic Activities, Monsoon, El-nino effects and cyclones, Natural Hazards & Disasters etc.

Distribution of Nature Resources

World Distribution of natural resources - Forest, Iron Ore, Bauxite, Coal, Petroleum, Hydel Power, Atomic power-non-conventional energy sources etc.

Agriculture : Agricultural Location, Agricultural Types, Agricultural Regions etc.

Industries : Factors of Localizations, Textile, Iron and steel, cement, sugar industries etc.

Population : Growth, Distribution, Density, Sex Ratio, Migration, Health, Urbanization etc.

Main Tribes : Eskimo, Pigmy, Bushmen, Kirgiz etc.

Transportations : Trans-Siberian railways, Canadian National, Canadian Pacific, Cape of Good Hope water way etc.

Environment : Concepts of ecology and eco system, Bio-diversity-Type of depletion, Pollution - Air and Water, Global Warming and Ozone depletion, Concepts of Sustainable Development etc.

World Trade Trade and economic groups, World Trade Organization (WTO), European Economic Community (EEC), Brazil, Russia, India, China, South Africa (BRICS), South Asian Association of Regional Cooperation (SAARC) etc.

Geography of India

Location, Extent and Federal Structure, Geological Structure, Relief, Climate, Drainage System, Vegetation, Soils, Water Resources, Resources Scarcity, Energy Crisis etc.

Environment Degradation and Conservation : Air, Water, Soil etc.

Minerals : Distribution and Production of Iron-ore, Coal, Petroleum etc.

Agriculture : Wheat, Rice, Millets, Tea, Coffee & Rubber, Agro-climatic Regions, Agricultural Revolutions etc.

Industry : Location. Production and Trade of Cotton Textile, Cement, Paper, Sugar, Chemical etc.

Population : Regional Pattern of Growth, Distribution, Density, Literacy, Sex ratio, Rural-Urban structure etc.

Transport : Railways, Highways, Waterways and Airways and their role in regional development etc.

Tribes : Habitat, Economy and Society of Gonds, Bhils, Santhals, Nagas etc and trends of their transformation.

Geography of Uttarakhand

Location, Extent and strategic importance, Structure and Relief, Climatic Characteristics, Drainage System and Natural Vegetation, Mining and Quarrying, Soils etc. Agriculture and Irrigation, Horticulture, Animal Husbandry, Storage and Marketing of Farm products, Tourism - Problems & Prospects, Population, Distribution, Density, Sex Ratio, Migration, Health, Urbanization and Urban Centres, Scheduled caste & Scheduled tribes (Bhotia, Tharu, Jaunsari, Buksa and Van-raji etc), Transport network, Industrial Development and Major Hydel Projects. Environment and Forests movements - Wild Life, National Parks and Sanctuaries, Natural Hazards and Disaster Management, Chipko Movement & Maiti Movements etc.

Part V

(Fifth Question Paper : Economic and Social Development)

Total Marks : 200

Time : 3 Hours

Economic and Social Development

Meaning of Economic and Social Development. Human Development Index (HDI) & Human Poverty Index (HPI). Characteristic of Indian Economy - Before and after Independence. Census of India - Economic & Social Features. Population growth & economic development. Issues related to role of women in Economic and Social Development in India. Impact of Globalization on Indian Society : Poverty & Development, Poverty line and Programmes for eradication of Poverty in India. Schemes for Rural & Social Development - welfare and developmental programmes including self help groups (SHG'S), MNREGA and Community power structure. Sustainable development and Inclusive growth. National Income - Measurement & Compositions. Regional imbalances & Income inequalities in India : Steps taken by the Govt to reduce it.

Indian Agriculture and Industry

Role of Agriculture in Indian economic development - Interrelationship between agriculture, industry and service sectors. Problems of Agriculture : Land reforms, Soil Fertility, Credit Supply - National Bank for Agriculture and Rural Development (NABARD), Farm Subsidies and Minimum Support prices etc. Public Distribution System : Objectives, Functioning and issue of food security. Industrial Growth and Structure - Public, Private and Joint Sector, Industrial Sickness. Importance of Micro, Small and Medium Enterprises (MSMEs), PPP Model of Economic Development. Role of Foreign capital and Multi National Corporations (MNCs) in industrial development. New Economic Policy (NEP) : Its Impact on Agriculture, Industry and Foreign Trades.

Economy of Uttarakhand

Main Feature of Economy of the State, Natural Resources - Water, Forests, Mineral etc., Infrastructure-Institutional : Banks, Self help groups, Education, Energy, Communication, Health etc. Economic Profile of the State - State Domestic Products and their components, Per Capita Income, Main sources of Income - Agriculture, Forest products, Hydel projects & Tourism etc. Industrial Development - Problems and Prospects, Large, Medium, Small & Cottage industries. Economic Planning : Challenges of Planning in the state, State planning commission. Major economic problems of the state, Migration, environmental degradation, Development of transport and communication facilities etc. Welfare Programmes : Women's empowerment, MNREGA, Sainik Kalyan & Purnarvas etc.

Part VI

(Sixth Question Paper : General Science & Technology)

Total Marks : 200,

Time : 3 Hours

Physical and Chemical Science

Motion : Measurements and physical quantities and system of units linear motions, Circular motion and vibrational motion, Force and laws of motion, Universal law of gravity, acceleration due to gravity, artificial satellites and their history. Work, power and Energy, Concepts of Pressure, atmospheric and hydro static pressure and their utility in daily life, Surface tension, Mechanical waves - audible, Infrasonic, and ultrasonic, their main characteristics, earth-quake and its causes, epicenter, seismic waves, and their transmission. Electromagnetic waves, their types and characteristics, X-rays, their type and utility in human life. Elementary idea of LASER, Holography, Radio activity, Nuclear Fission & Fusion. Electric current, its chemical, thermal and magnetic effects; electric motor, electric generator and electric transformer, electric power plant, domestic power supply and safety for handling electricity, Human eye, its defects, their causes and remedies, Microscope & telescope, Conductors, semiconductors & insulators.

Energy : non renewable, renewable energy sources, Introduction to solar appliances viz solar cell, solar cooker, water heater etc., Bio gas - principle & process. Energy scenario in India - Problems of energy crises, Govt policies & programmes for power generation. Nuclear power programme, Nuclear policy of India - salient features, recent trends in nuclear policies such as NPT (Nuclear non-proliferation treaty) and CTBT (Comprehensive test Ban treaty).

Space Technology

Space programme in India and its application with special references to industrial, agriculture, telecommunication, television, education and Indian missile programme, Remote sensing, Geographical Information System and its application in weather forecasting, Disaster, warning, water, oil and mineral development, urban planning and rural development activities : Introduction to global positioning system (GPS) and remote sensing (IRS) satellite system.

Life Science

Structure and functions of animal cells and cell organelles, Bio-molecules, Introduction to basic functional aspects of mammalian system - digestive, circulatory, respiratory, nervous, excretory, endocrine and reproductive, Blood groups, Chromosomes, linkage, sex-linked, inheritance and sex determination, DNA & RNA, Economic zoology (Fish & fisheries, Apiculture, Sericulture, Vermiculture, piggery, Poultry, Dairy etc.), Domestic & wild animals, usefulness of mankind, exploitation of animals by man as food and medicine.

Plant and mankind, characteristics of plants, structure and functions of plant cells and organelles, Diseases of plants caused by fungi, bacteria and viruses, etc and their prevention, basic concepts of ecosystem, food web & food chain, Economic botany.

Biotechnology : Introduction of Biotechnology, its potential to improve human life and national economy through agriculture (bio fertilizer, biopesticides, Bio-fuels, genetically modified crops), industrial development and employment generation. Areas of application - pharmaceutical, human health-care, food technology, energy generation etc, Efforts of government in promoting biotechnology in the country. Ethical, social, legal and IPR (Intellectual Property Rights) issues related to biotechnologies developments.

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Introduction and application of Genetic Engineering and stem cells research, use of nano technologies in fields of agriculture, animal husbandary (Cloning and transgenic animals applications in vitro fertilisation (IVF) and genetically modified organism), biotechnology in environmental clean up process, Production of hybrid seeds and their processing techniques, BT Cotton and BT Brinjal etc. Tissues culture and molecular makers.

Microbial infection : introduction to bacterial, viral, protozoan and fungal infection in human beings. Basic knowledge of infections caused by different group of micro organisms - diarrhoea, dysentery, cholera, tuberculosis, dengue, malaria, scrub typhus, viral infection like HIV, encephalitis, chikungunya, bird-flu - preventive measure during outbreaks, Zoonotic diseases, elementary knowledge vaccines, Immunology basic concepts.

Computer, Information & Communication Technology & Cyber security

Definition of digital computer, Elements of computer : input units, output units, Primary memory, Secondary memory and processing units. Classification, generations, applications and limitations of digital computer. Data, Data processing, bussiness data processing, data storage, file management system and data base management system. Software and application of PC software package : Software definition, Type of software and its value, Knowledge of word processing, Spreadsheet and power point, presentation software packages. Basic element of communication system, data transmission mode, transmission media, network topologies, networks type, communication protocols, network security mechanism. Definition of internet, search tool, web browsers, e-mail & search engines. IT Applications : E-cards, E-shopping, E-commerce. Role of external state and non-state actor's in creating challenges to internal security, challenges to internal security through communication networks, Role of media and social networking sites in internal security challenges, basics of cyber security, Role of biometric devices in security, IT Act (2000), Security challenges in border area linkages of organized crime with terrorism, management in border areas by various security forces/agencies.

Environmental Problems and Disaster Management

Types of Pollutions and their management : air, water, soil, sound/noise, radioactive & e-waste, industrial waste and their management, Impact of solid waste management, recycling & reuse, Watershed management, Watershed approach for sustainable development, Human role in pollution control, Environment & Human Health, Effects of Pollutants on animal and plants, Urbanisation & industrial development.

Global environmental issues, like Green House Effects, Green house gases and their mitigation, climate change, acid, rain, global warming, Ozone Depletion, Bio diversity & its conservation, Hotspot and threats to Biodiversity. The environment protection act 1986 and forest conservation act, Kyoto protocol, Carbon credits and carbon footprints, United Nations environmental conservation programme (UNEP), National Parks, Sanctuaries, Biosphere reserves and Botanical Gardens, wildlife and it's management, Human and wild animal struggle, Seismic activity zones : Development & Environment. Disaster management : Definition, nature, types and classification of disaster, Natural Hazards, Causative factors and mitigation measures, Disaster management Act (2005), National Disaster Management Authorities (NDMA).

Uttarakhand Rehabilitation and Reconstruction Authority

Earthquake, Cloud burst, Flood, Cyclone, Tsunami, Landslides, drought etc. Factors affecting mitigation measures, Disasters in the Uttarakhand Himalayan Regions and other Himalayan States. Need of Eco Sensitive zone in Uttarakhand, Man made calamities-chemical and nuclear hazards. Case studies of various natural and man made hazard at international, national and Uttarakhand state level and their impact, NDRF (National Disaster Response force) and SDRF (State Disaster Response Force). General awareness on current event of state, National & International level.

Part VII

(Seventh Question Paper : General Aptitude & Ethics)

General Aptitude

Numbers & their classification : Natural, Real (Rational & Irrational), Integers, Division of numbers and prime numbers, Operation on real numbers, Power root method for the real numbers, Least common multiple (LCM) and Highest Common Factors (HCF) of integers and their relation & differences. Ratio & its properties, Expressing a given number into a given ratio, comparison of ratios, respective proportion, proportional relation between two or more relation. Exchange of a number into rate of interest and rate of interest into number, Expressing a given quantities as a percentage of another quantities, conversion of a percentage into decimal and decimal into percentage, two step change of percentage for a number, percentage excess and percentage shortness, gain percentage, profit and loss percentage, relation between cost price and selling price. Effect of change of principle (P), Rate (R) and Time (T) on simple interest, repayment of debt in equal installments, compound interest when the interest is compounded yearly, half yearly & quarterly, rate of growth and depreciation, principal amount, time, rate & interest. Difference between compound and simple interest. Problems on basic concepts of work and time, Simple liner simultaneous equation, sets, subsets, proper subsets, null set and operations on sets (Union, Intersection, Difference), Venn diagram, Elementary knowledge of triangle, rectangle, square, rhombus and circle, theorems related to their properties and their parameter & area. Volume and surface area of sphere, rectangular and circular cylinder and cone, cube. Cartesian system, plotting of a point and distance formula, section formula, area of a triangle, Analogies, Arrangement, causes and effects, family trees, puzzles base questions, sequences & series, code based question on letters of alphabet, syllogism, statement & conclusion, problem based on clocks. Significance, sufficiency, collection, classification of data, frequency, cumulative frequency, tabulation and presentation of data - simple, multiple, sub divided bar diagram, pie chart, histogram, frequency curve, frequency polygon, ogive, analysis and interpretation of data. Arithmetic mean, geometric mean, harmonic mean, median, mode, combined mean of several sets of observations, average by increasing and decreasing of elements of sets, quartiles, decimal and percentiles. Classical and statistical definition of probability, addition and multiplication theorems of probability with simple examples, events, sample space.

Ethics

This section will include questions on, candidates in public life, integrity, honesty, attitude, psychology, ethics and related case studies. Emotional / Psychological / Humanistic intelligence concepts and their utilities and application in administration and governance. Ethics & Human interface : Essence, Determinants and consequences of Ethics in Human action : Dimensions of ethics, ethics in private and public relationship, Human values lessons from the lives and teaching of great leaders, reformers and administrations : role of family, society and educational institutions in inculcating values. Attitude : Content, structure, function, its influence and relation with thoughts and behavior : morals & political attitudes, social influence and persuasion. Attitude & fundamental values for civil service. Integrity, impartiality, non partisanship, objectivity, dedication to public service, empathy, tolerance and compassion towards the weaker section of society, Contributions of moral thinkers and philosophers from uttarakhand states, India & World. Need of public service, Public civil service values and ethics in public administration : Status & problem, ethical concerns and dilemmas in government and private institutions. Laws, rules, regulations and conscience as sources of ethical guidance, accountability and ethical governance, ethical issues in international relations and funding, Corporate Governance, Probity in Governance, Concept of public service, Philosophical basis of governance and probity, Information sharing and transparency in government. Right to information codes of ethics, codes of conducts, citizen's charters, work, culture, quality of service delivery, Utilization of public funds, challenges of corruptions, challenges for public servant in view of changed environment, Disaster & disaster management, Development of technique, Assistant / Prevailing in law, the role of public servants in disaster managements. Case study on above issues.

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